California-Nevada Climate and Drought Update

Mojave Trails National Monument, March 15, 2017
Photo: Bob Wick, Zuma Press

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CNAP-NIDIS Drought and Climate Update Webinar

March 27, 2017

DRI Desert Research Institute

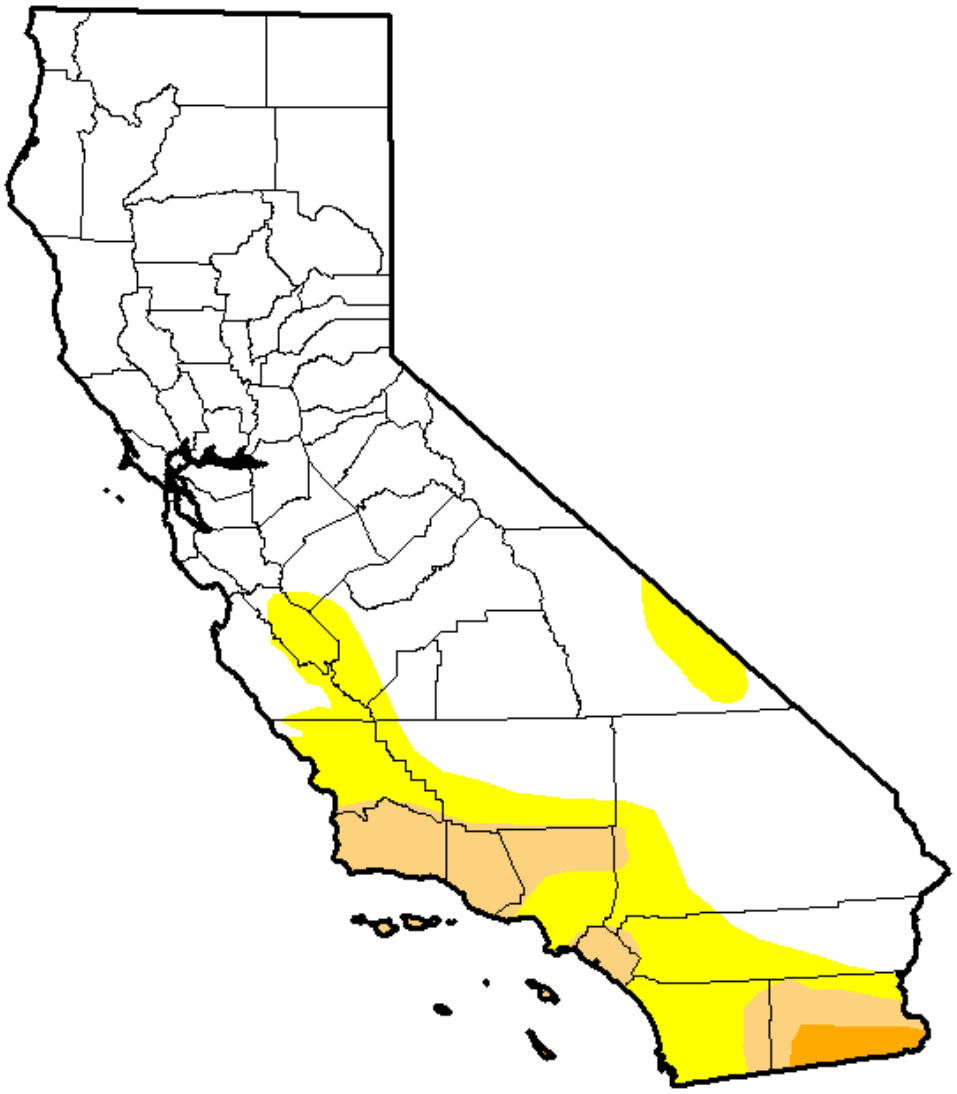
Western Regional Climate Center
Providing climate services since 1986

CNAP
California-Nevada Climate Applications Program
A NOAA RISA team

NIDIS
NATIONAL INTEGRATED DROUGHT INFORMATION SYSTEM

U.S. Drought Monitor

California



March 21, 2017

(Released Thursday, Mar. 23, 2017)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0	D1	D2	D3	D4
Current	76.54	15.22	7.18	1.06	0.00	0.00
Last Week *3/14/2017*	76.54	15.22	7.18	1.06	0.00	0.00
3 Months Ago *12/20/2016*	15.09	14.80	11.02	17.54	21.80	19.75
Start of Calendar Year *1/3/2017*	18.07	14.32	13.59	15.85	19.87	18.31
Start of Water Year *9/27/2016*	0.00	16.41	21.31	19.47	21.76	21.04
One Year Ago *3/22/2016*	1.16	7.29	18.70	17.54	20.57	34.74

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

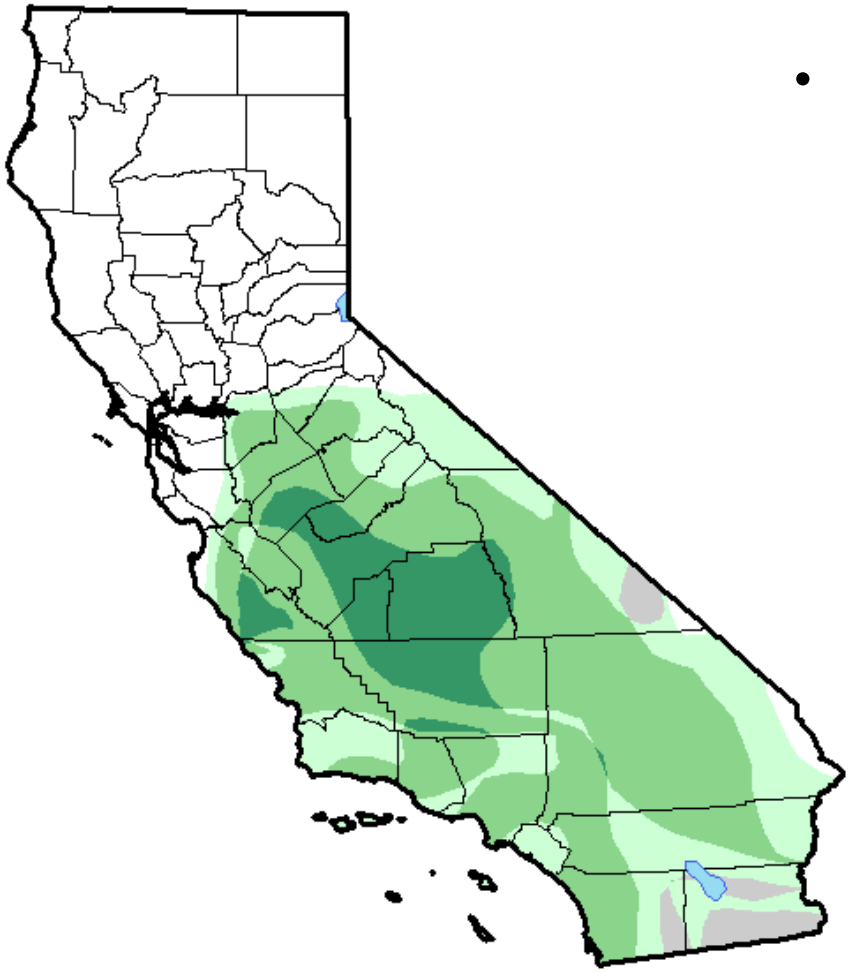
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
Eric Luebehusen
U.S. Department of Agriculture

http://droughtmonitor.unl.edu/

U.S. Drought Monitor Class Change - California

2 Months



- Widespread 1-3 class improvements in the past 2 months!

National Drought Mitigation Center

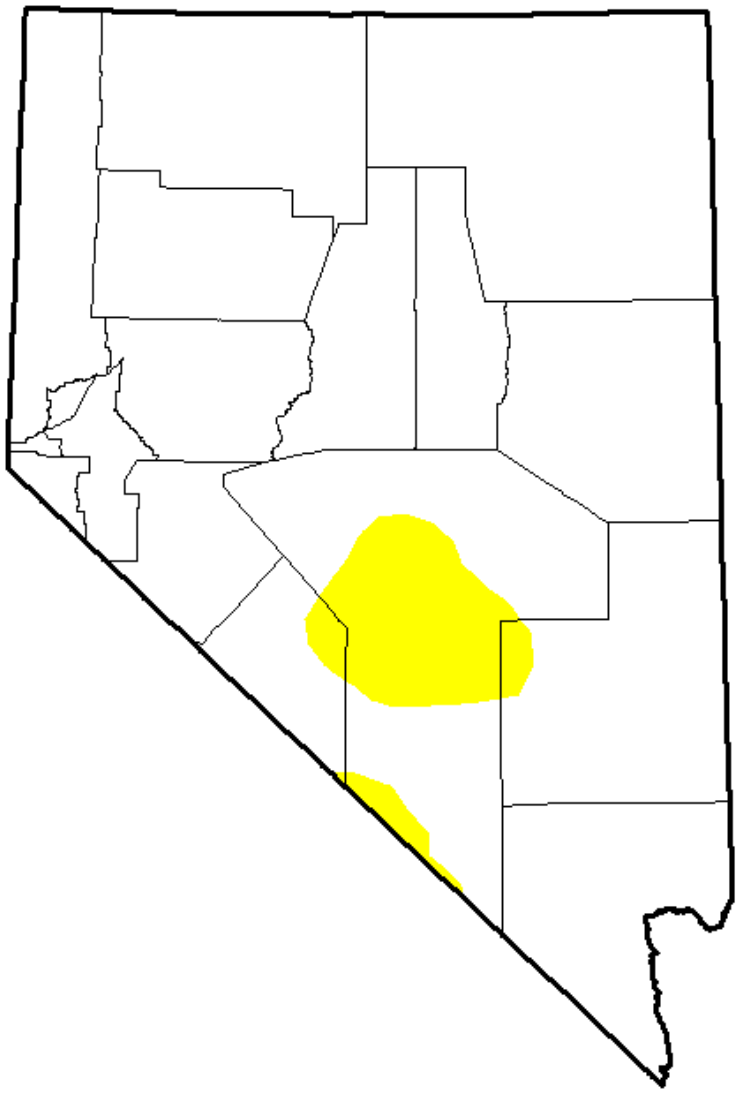
- 5 Class Degradation
- 4 Class Degradation
- 3 Class Degradation
- 2 Class Degradation
- 1 Class Degradation
- No Change
- 1 Class Improvement
- 2 Class Improvement
- 3 Class Improvement
- 4 Class Improvement
- 5 Class Improvement

March 21, 2017 compared to January 24, 2017

http://droughtmonitor.unl.edu

U.S. Drought Monitor

Nevada



March 21, 2017

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Drought Conditions (Percent Area)

	None	D0	D1	D2	D3	D4
Current	93.83	6.17	0.00	0.00	0.00	0.00
Last Week *3/14/2017*	93.83	6.17	0.00	0.00	0.00	0.00
3 Months Ago *12/20/2016*	29.22	36.59	27.02	7.00	0.18	0.00
Start of Calendar Year *1/3/2017*	36.88	29.48	26.51	6.95	0.18	0.00
Start of Water Year *9/27/2016*	19.64	43.76	14.92	21.42	0.26	0.00
One Year Ago *3/22/2016*	5.75	34.95	22.85	13.24	22.08	1.12

Intensity:

- D0 Abnormally Dry
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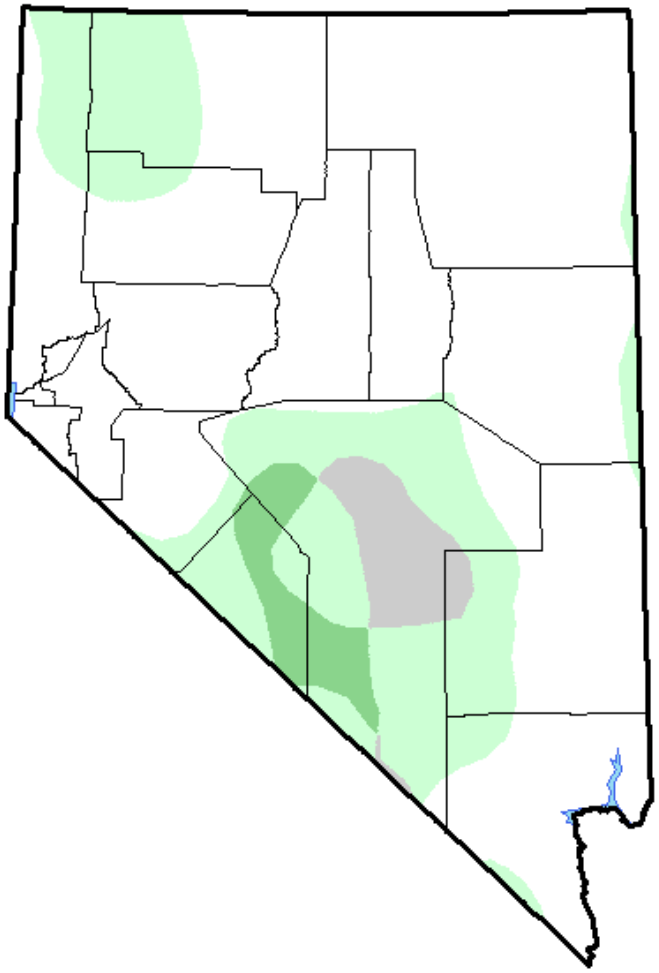
U.S. Drought Monitor Class Change - Nevada

2 Months



National Drought Mitigation Center

- 5 Class Degradation
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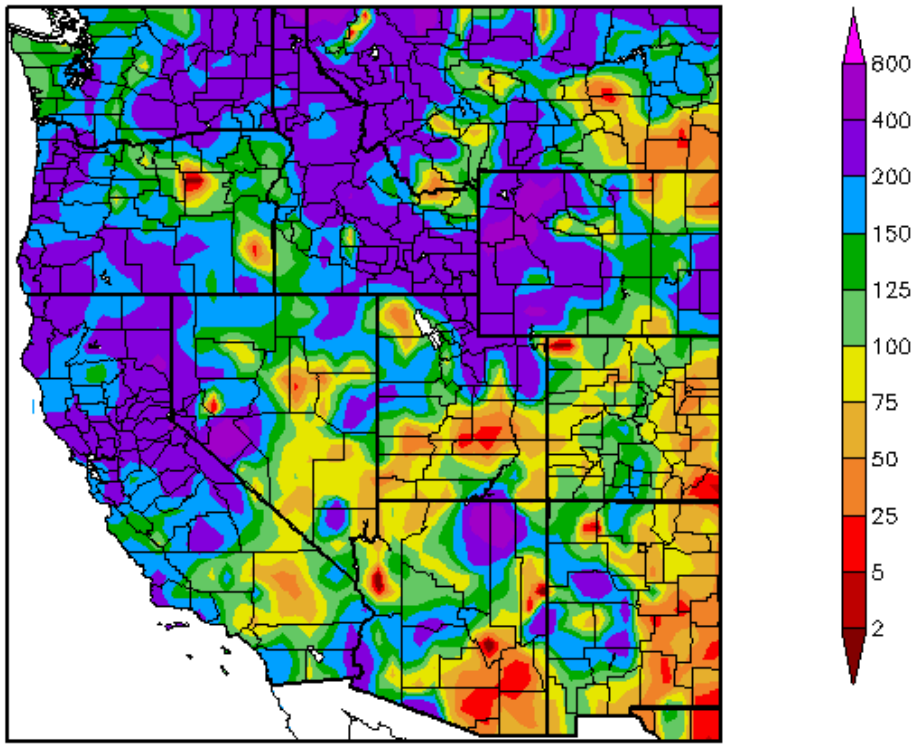
- 5 Class Improvement

March 21, 2017
compared to
January 24, 2017

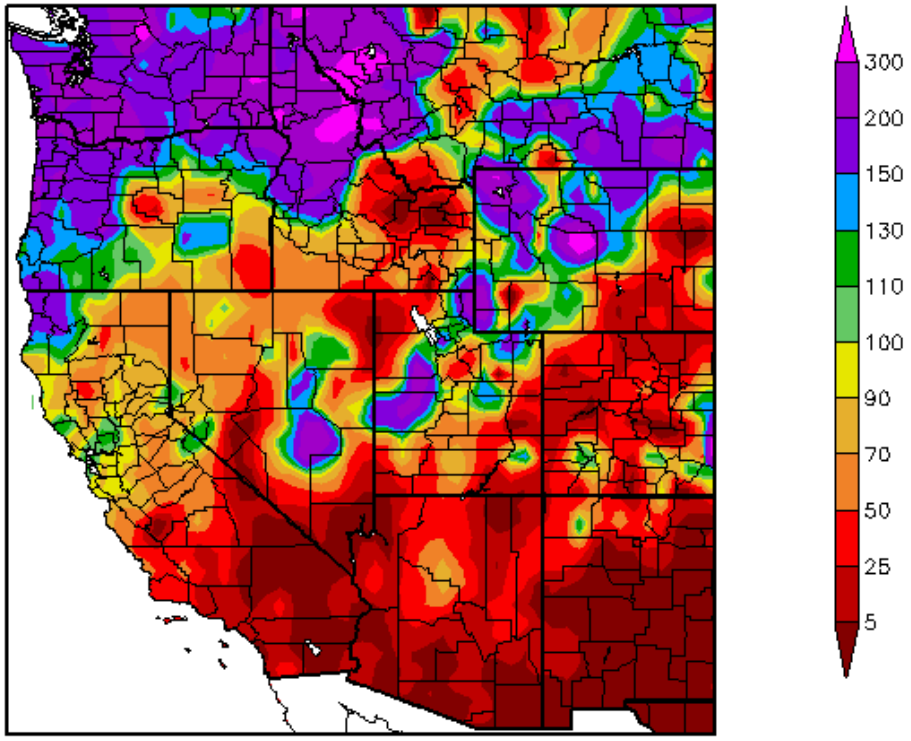
http://droughtmonitor.unl.edu

Precipitation

February 2017

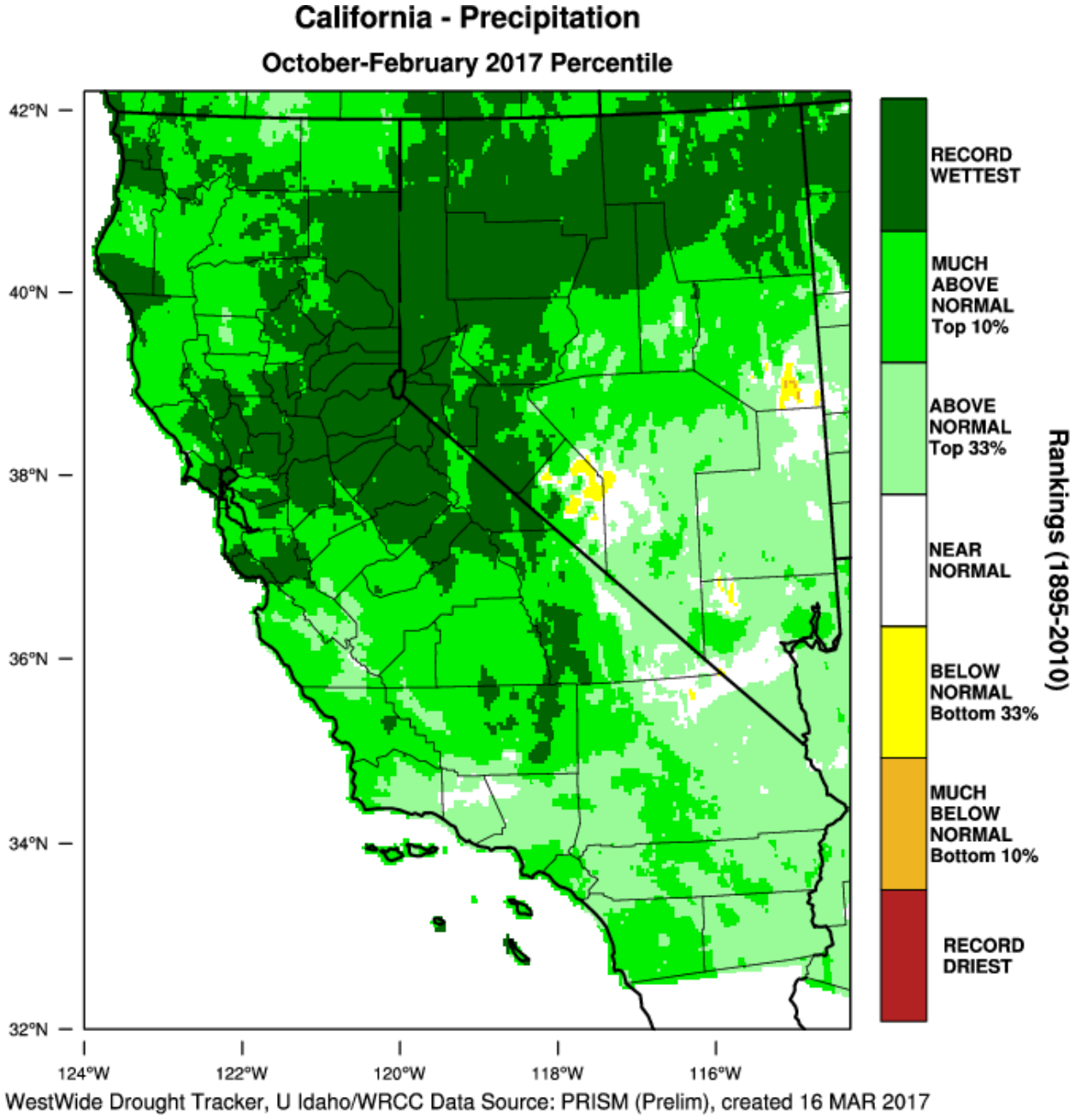


March 1-26, 2017



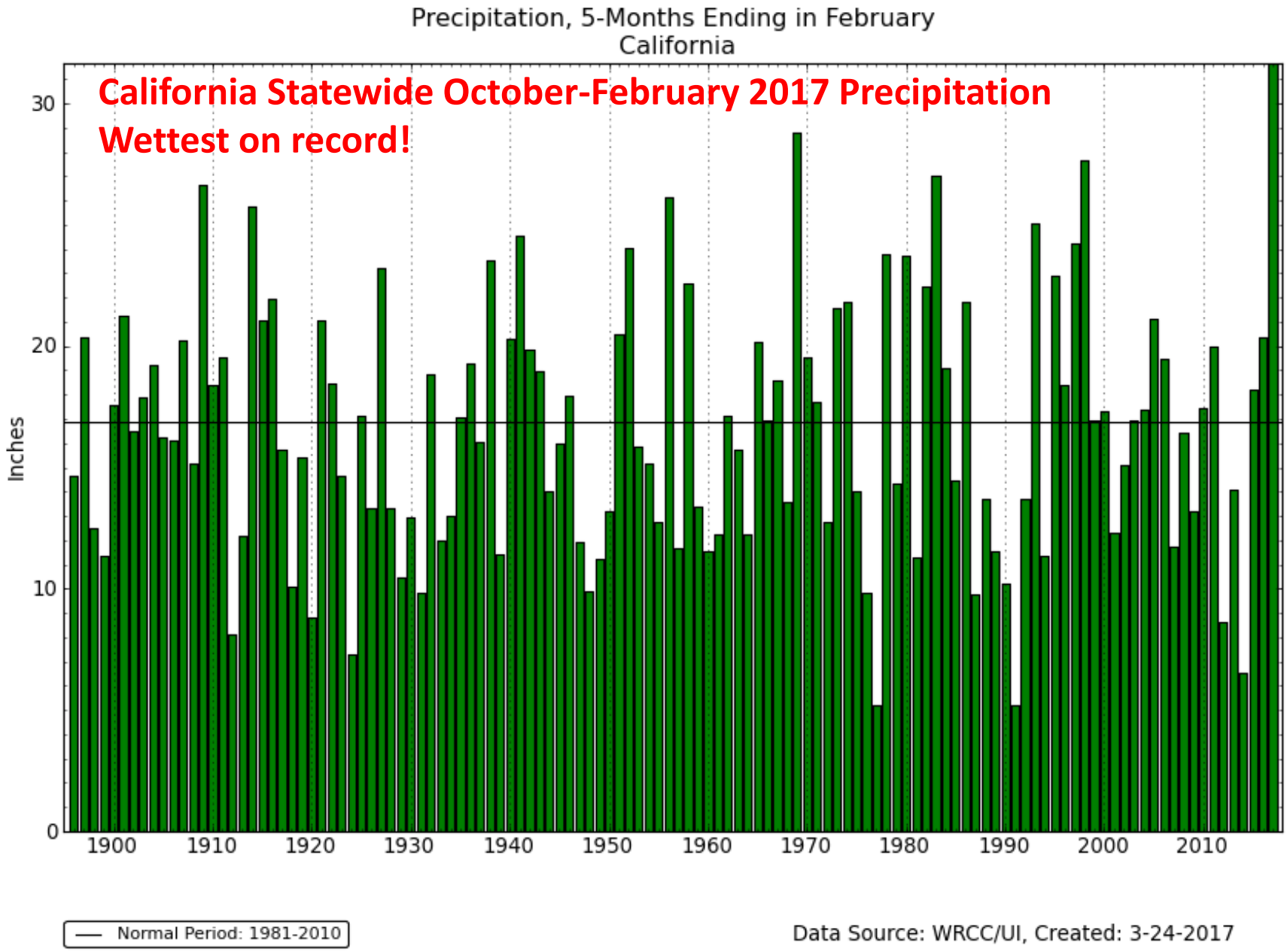
Source: hprcc.unl.edu

Precipitation

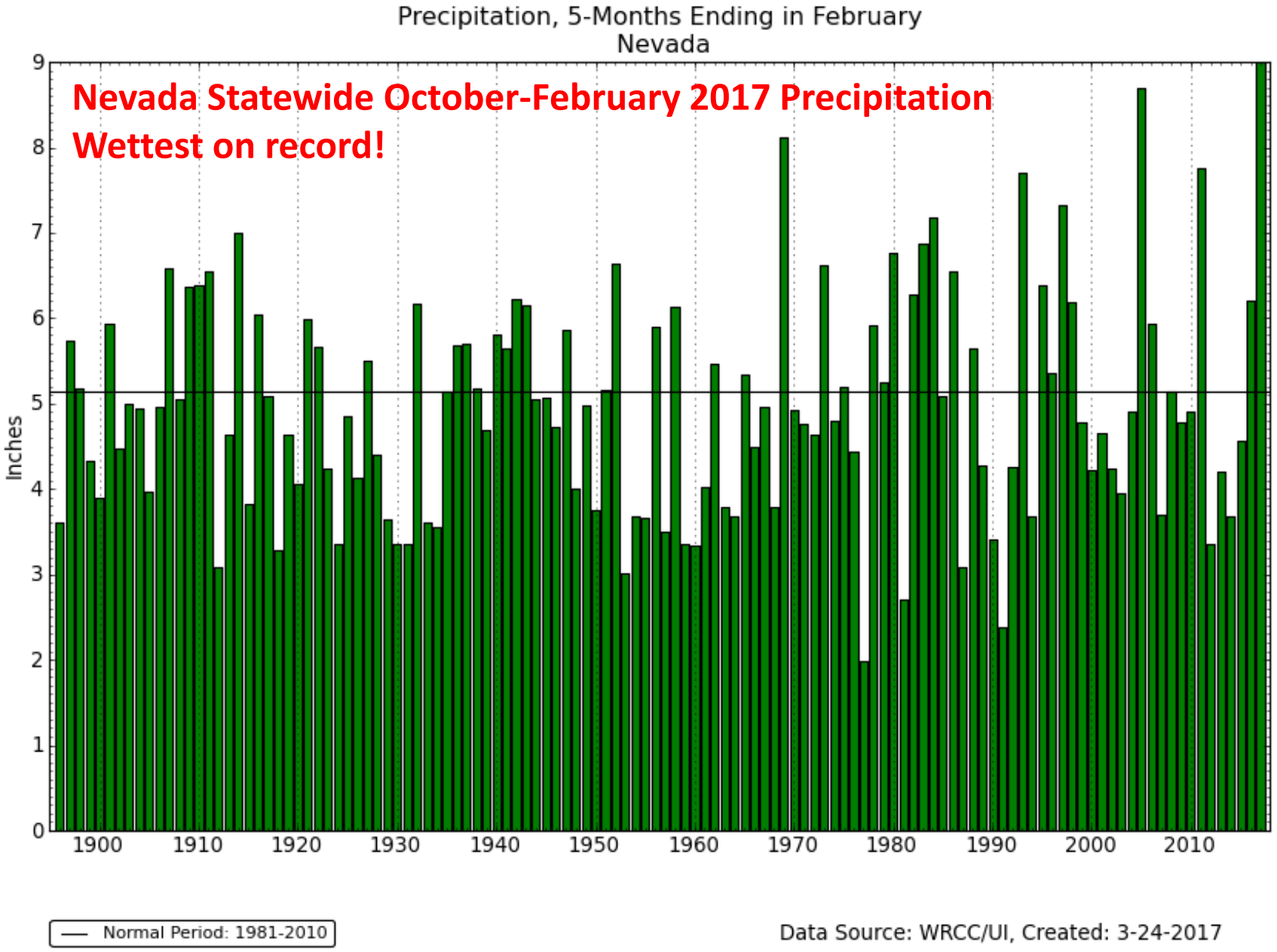


- Record wet Oct-Feb for many locations
- Based on PRISM, 1895-present

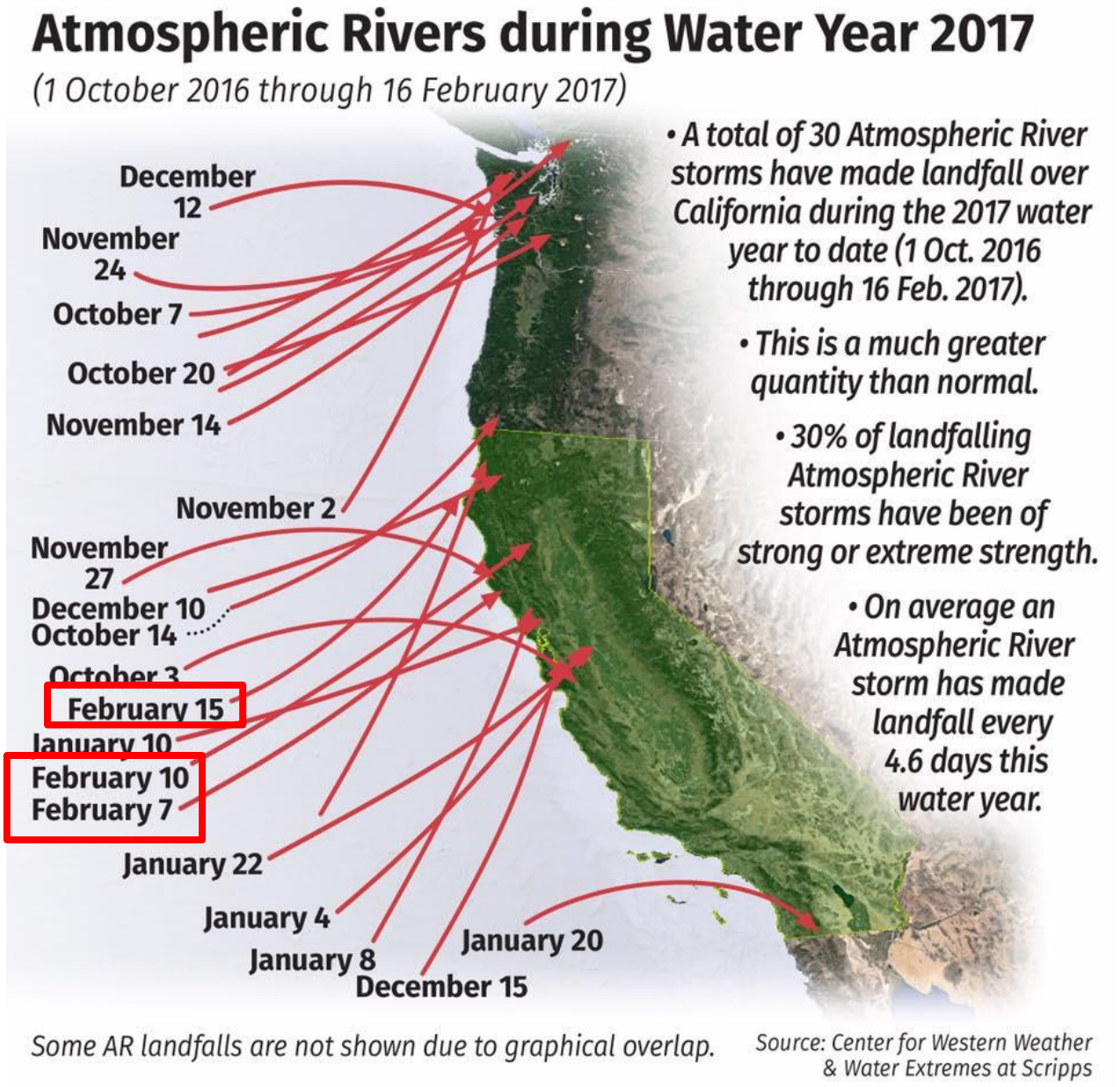
Precipitation



Precipitation

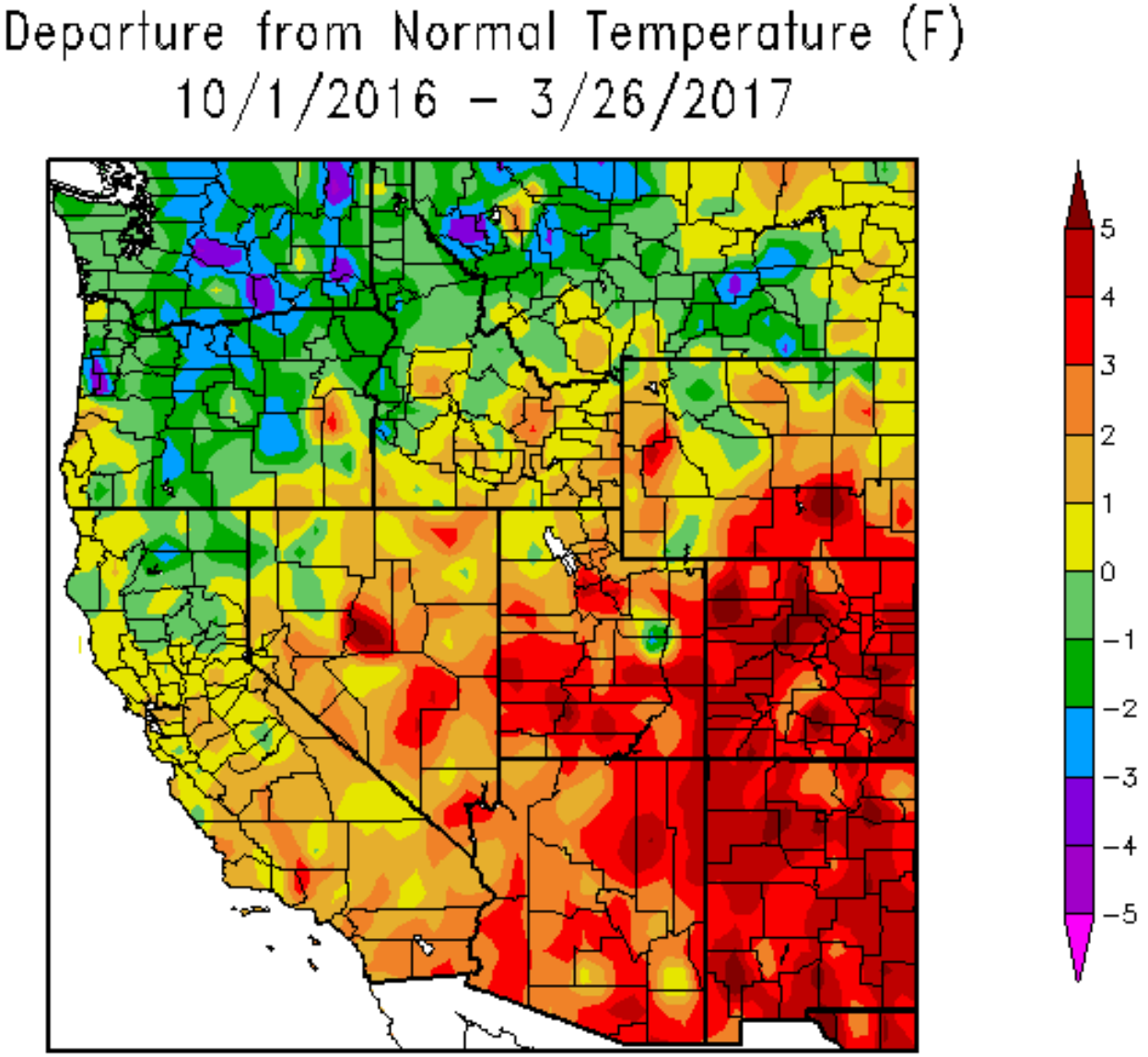


Abundant Atmospheric Rivers



Source: CA DWR/ Scripps

Temperature

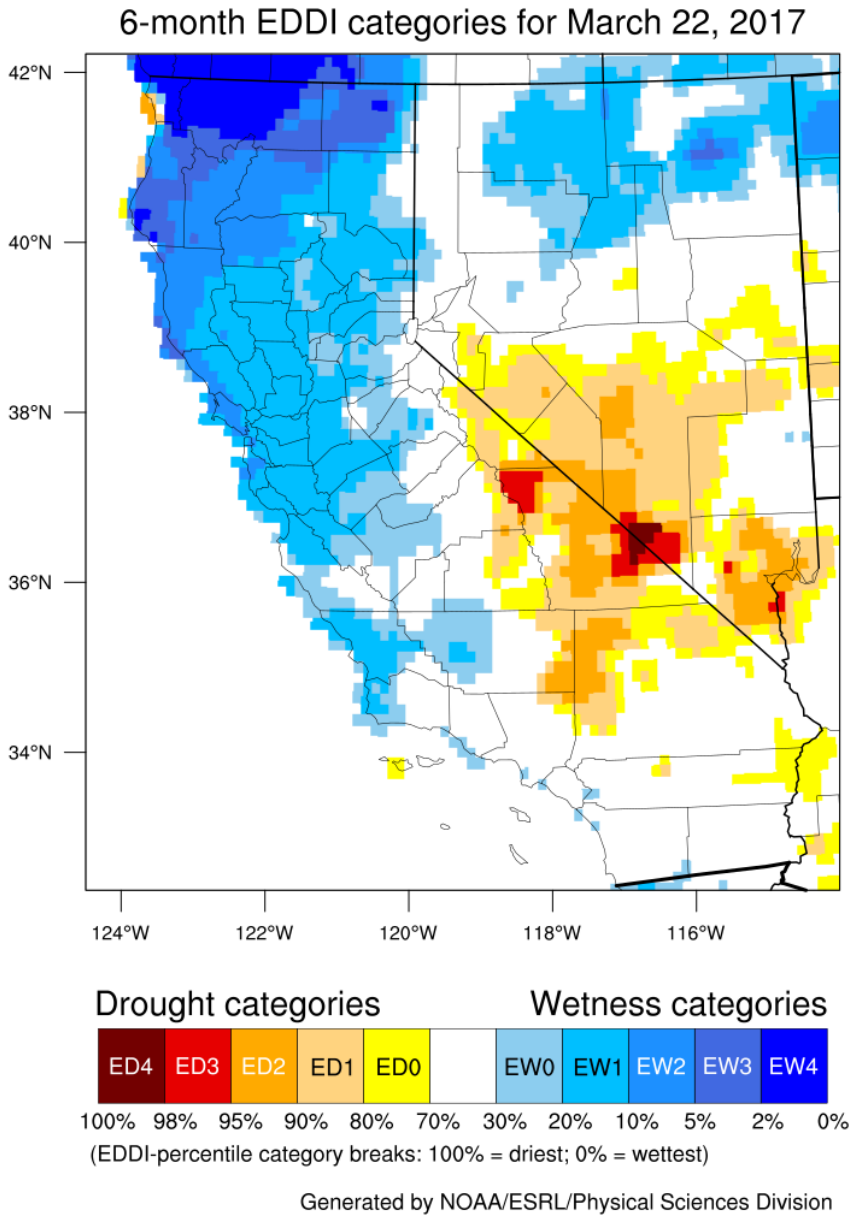


- Overall, far from a cold water year
- Cooler in northern CA/NV
- Quite warm in south

- Many of the large atmospheric river storms brought above normal temps and high snow levels

Source: hprcc.unl.edu

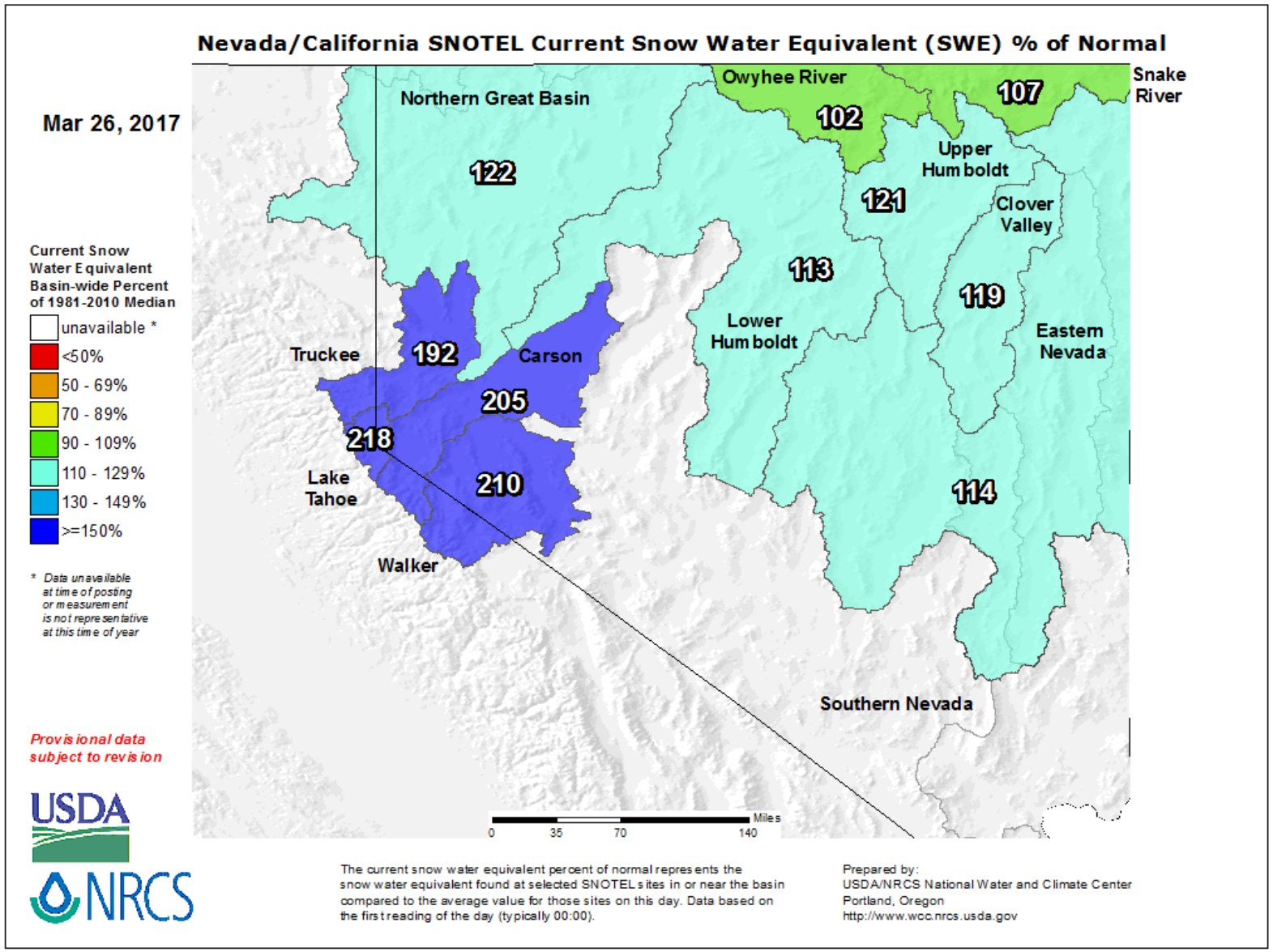
Evaporative Demand



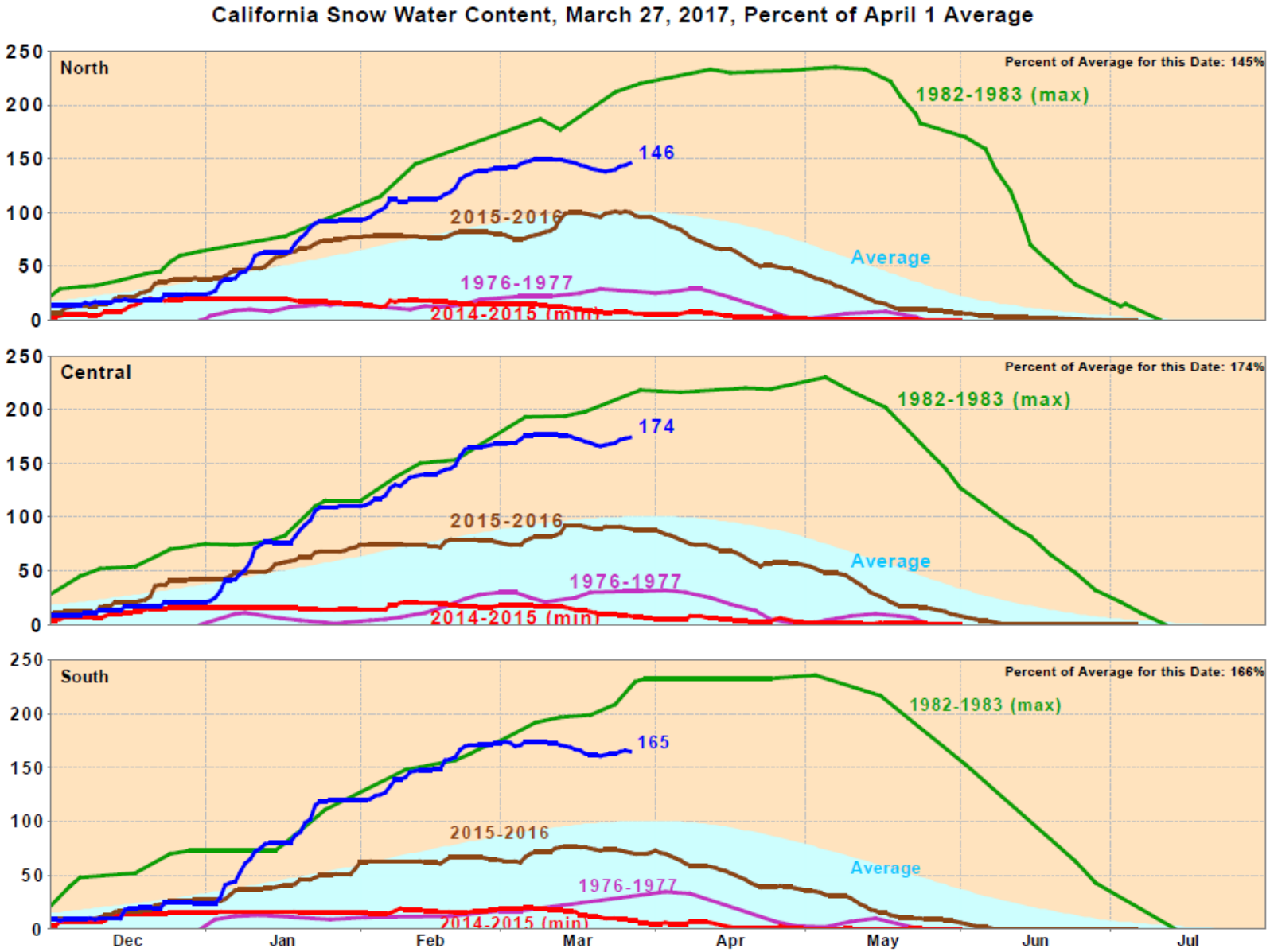
[EDDI: Hobbins et al. 2016, McEvoy et al. 2016, JHM]

- EDDI: Evaporative Demand Drought Index
- Temperature, humidity, wind, solar radiation
- Blues: cooler, more humid, more clouds
- Reds: warmer, drier, more clear sky, more wind
- Website (still in development): https://www.esrl.noaa.gov/psd/eddi/realtime_maps/
- FTP: ftp://ftp.cdc.noaa.gov/pub/Public/mhobbins/EDDI/

Snowpack


Nevada/California SNOTEL Current Snow Water Equivalent (SWE) % of Normal
Mar 26, 2017
Current Snow Water Equivalent Basin-wide Percent of 1981-2010 Median
unavailable *
<50%
50 - 69%
70 - 89%
90 - 109%
110 - 129%
130 - 149%
>=150%
* Data unavailable at time of posting or measurement is not representative at this time of year
Provisional data subject to revision
Northern Great Basin
122
Owyhee River
102
107
Snake River
Upper Humboldt
121
Clover Valley
113
119
Lower Humboldt
Eastern Nevada
Truckee
192
Carson
205
218
210
Lake Tahoe
Walker
114
Southern Nevada
0
35
70
140
Miles
USDA
NRCS
The current snow water equivalent percent of normal represents the snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).
Prepared by:
USDA/NRCS National Water and Climate Center
Portland, Oregon
http://www.wcc.nrcs.usda.gov

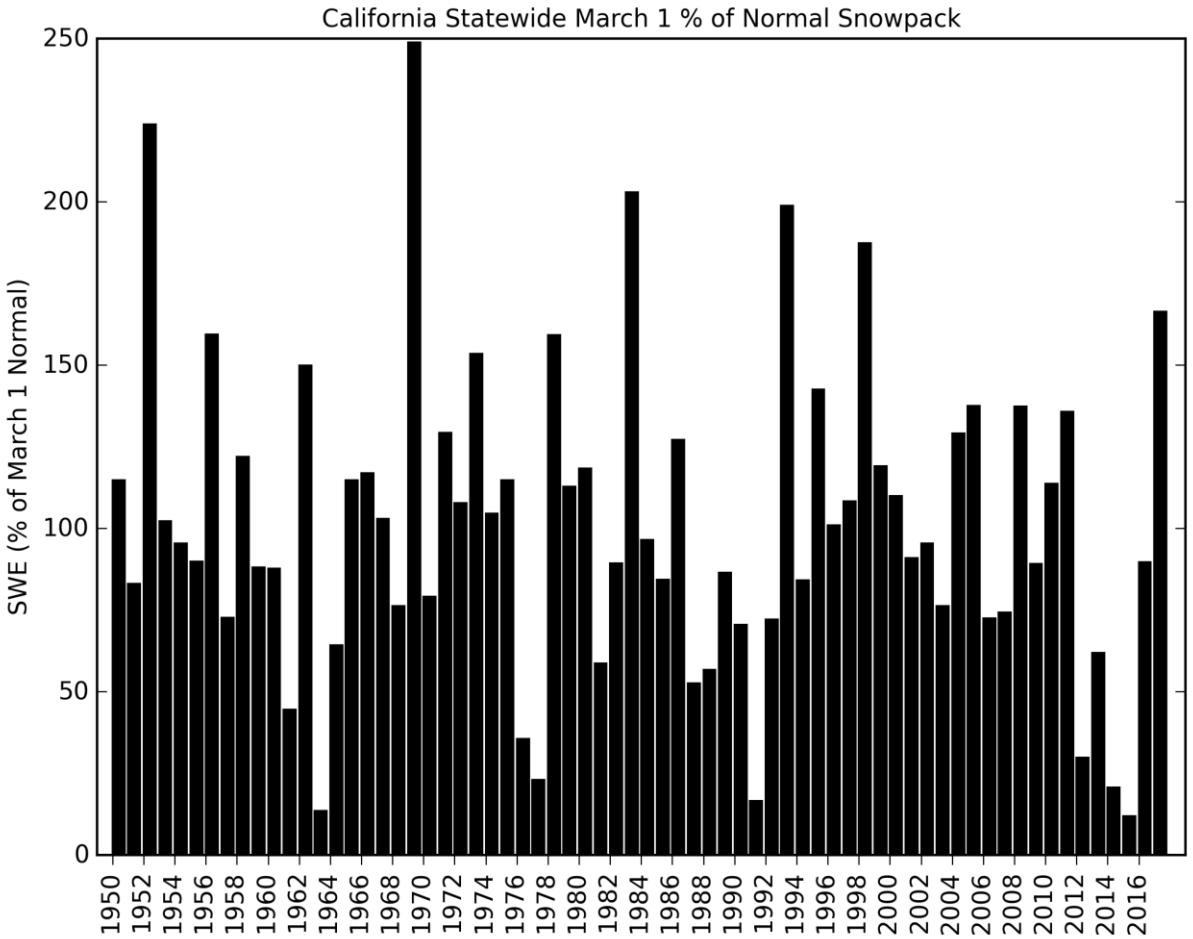
Snowpack

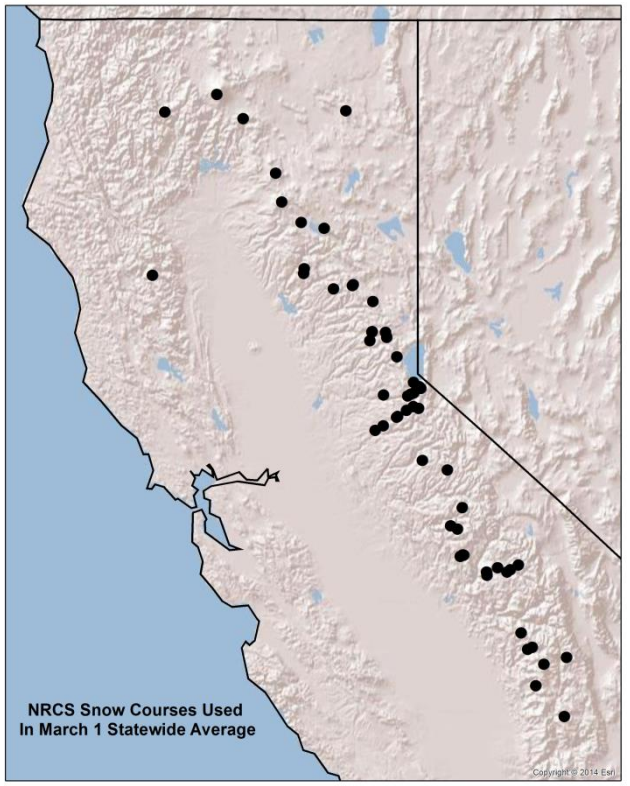


- Statewide: 163% of April 1 average

Source: CA DWR

Snowpack





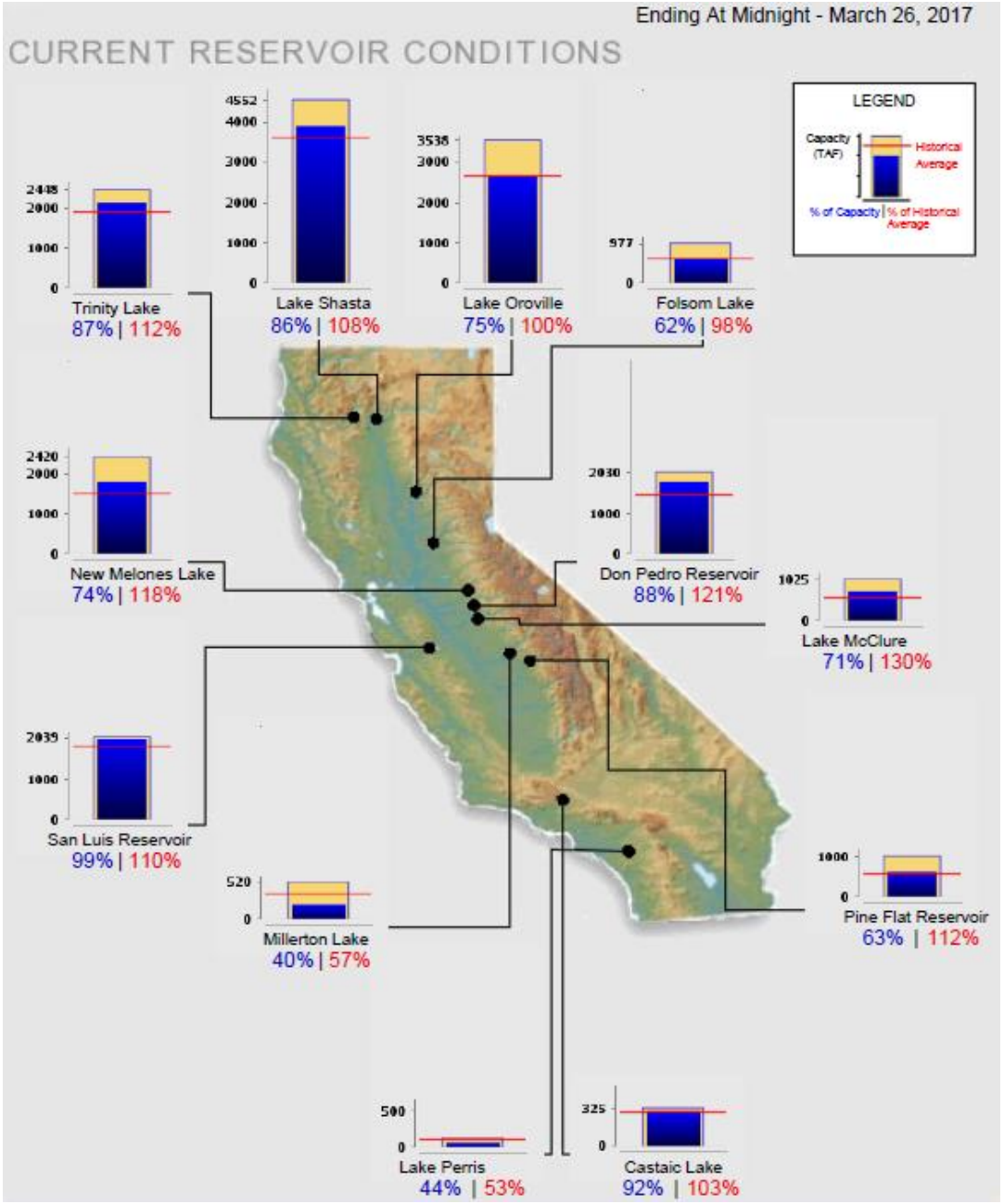
- California statewide March 1 % of normal snowpack from 58 snow courses
- 1950-2017
- 2017 ranks #6

Data: NRCS, Graphics: Dan McEvoy, WRCC

Reservoirs

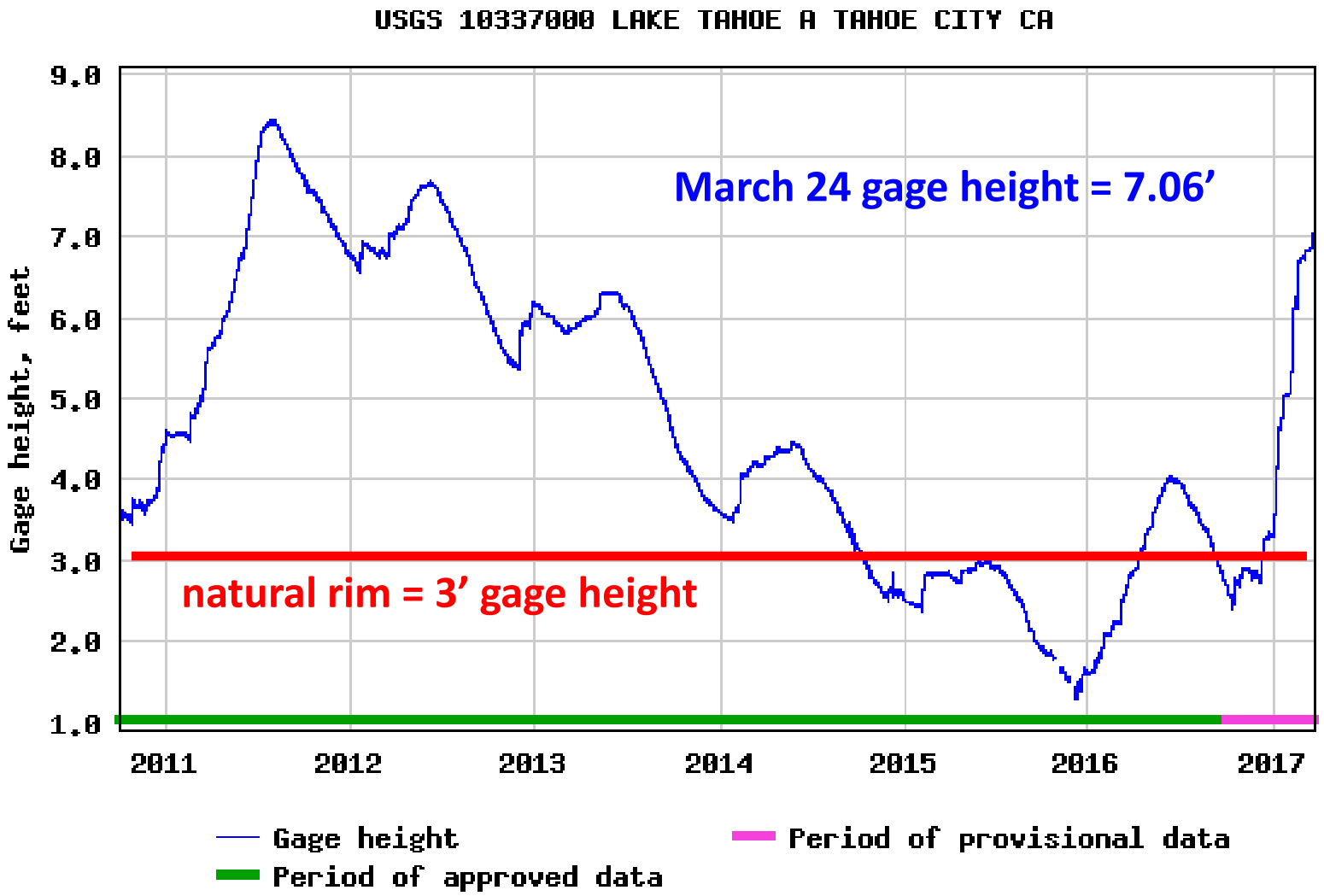
- All reservoirs above or close to historical average with two exceptions

- Exceptions:
  - Millerton Lake (57% of average)
  - Lake Perris (53% of average)



Source: CDEC/CA DWR

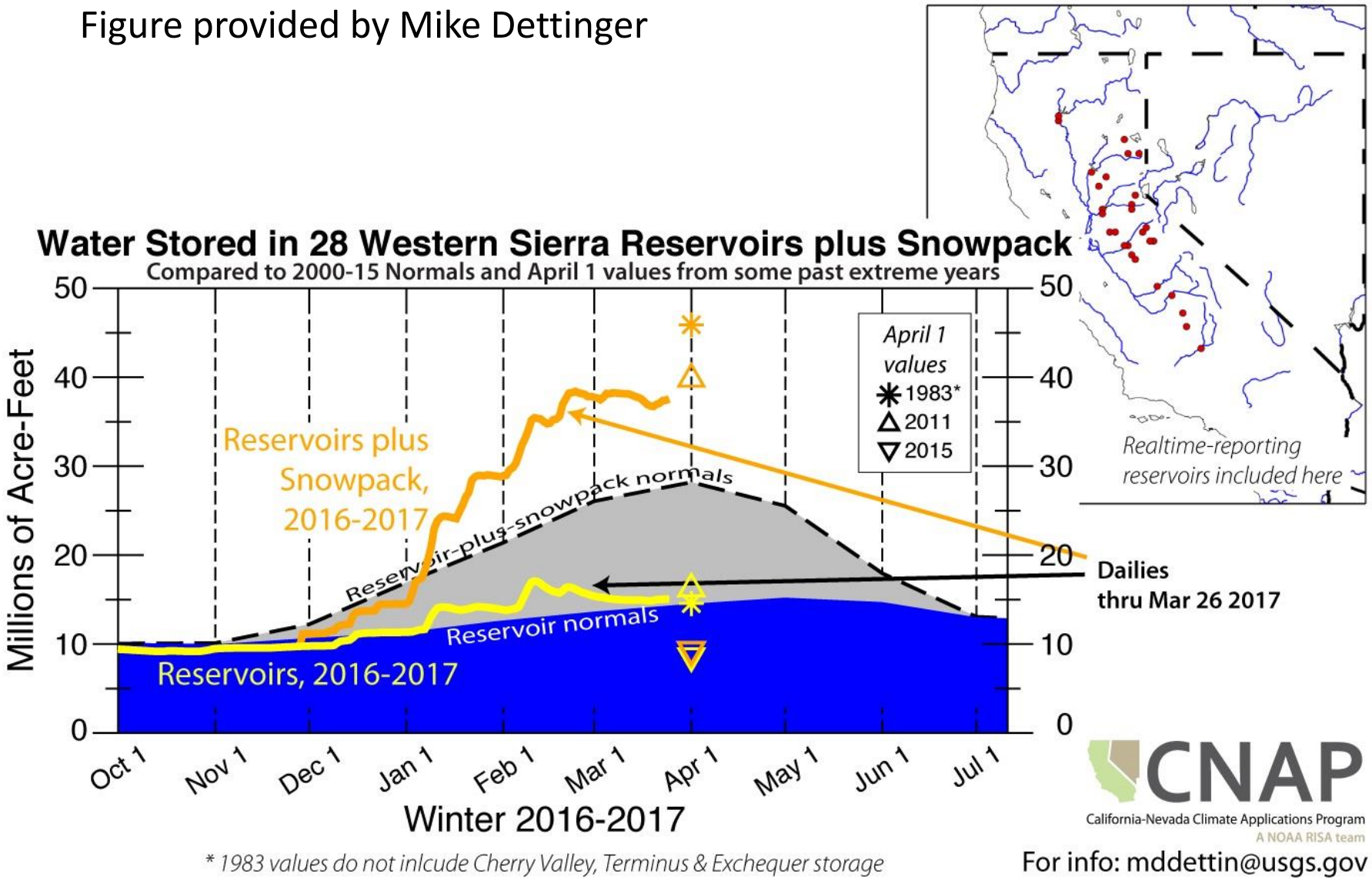
Reservoirs



- Tahoe will fill this summer = **largest single season rise in Tahoe since records began**
- Currently releasing water to Truckee River to avoid overflow (rare for this time of year

Reservoirs + Snowpack

Figure provided by Mike Dettinger



CNAP
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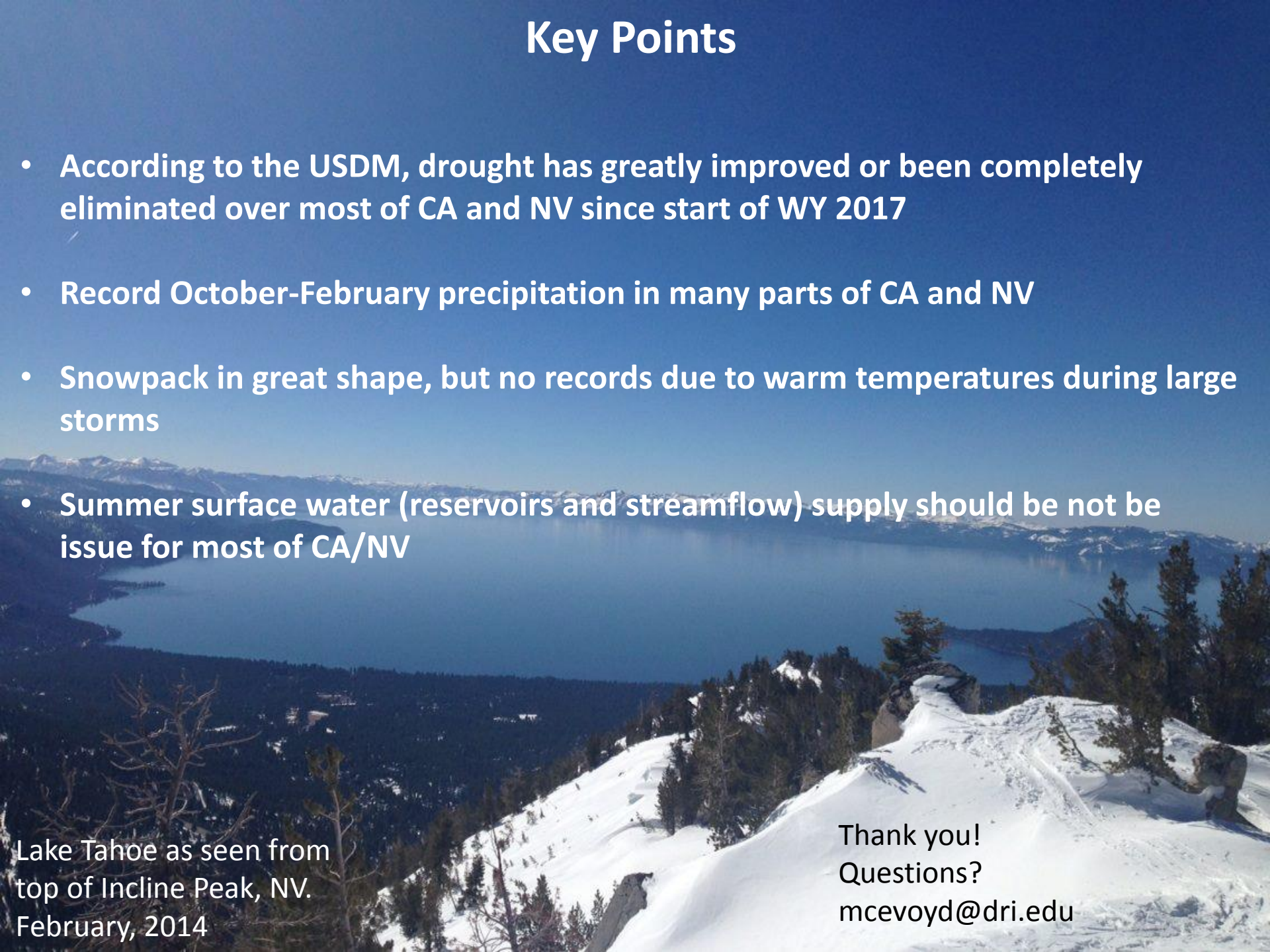
A NOAA RISA team

For info: mddettin@usgs.gov

Key Points

- **According to the USDM, drought has greatly improved or been completely eliminated over most of CA and NV since start of WY 2017**
- **Record October-February precipitation in many parts of CA and NV**
- **Snowpack in great shape, but no records due to warm temperatures during large storms**
- **Summer surface water (reservoirs and streamflow) supply should be not be issue for most of CA/NV**



Lake Tahoe as seen from top of Incline Peak, NV. February, 2014

Thank you!
Questions?
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